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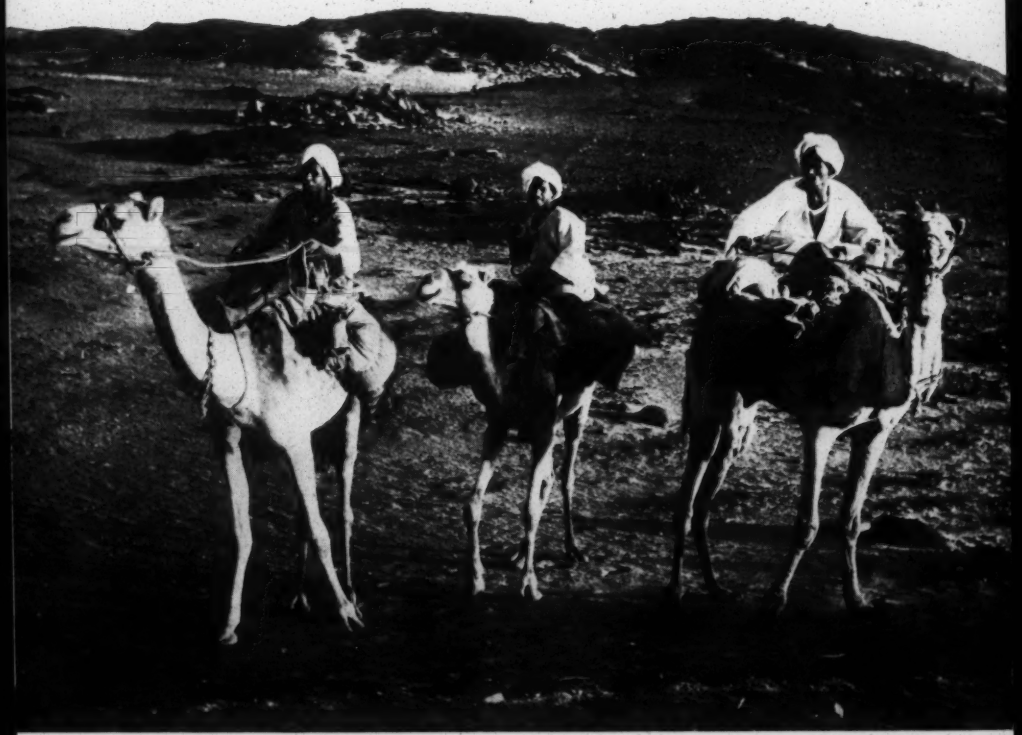


GILBERT GROSVENOR

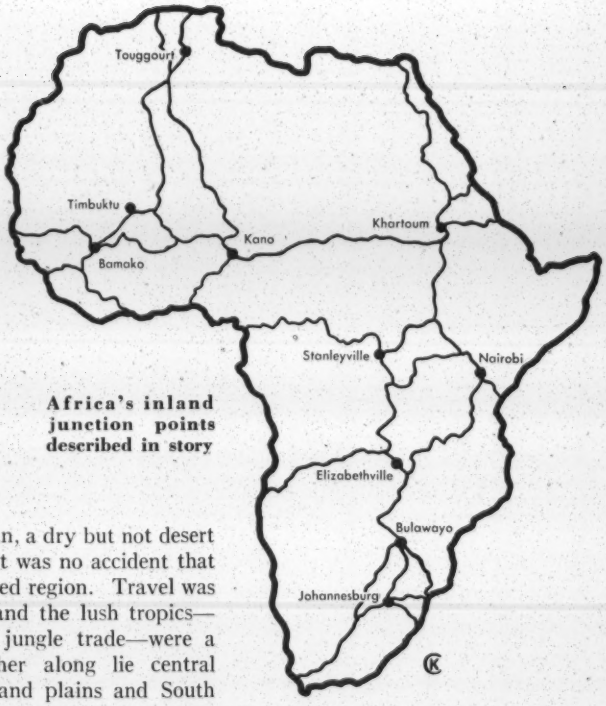
CROSSROADS: *Where Men and Geography Meet*

- Africa's Meeting Places—Oasis to Metropolis
- Minerals—A Magnet to Man
- 'Artificial' Crossroads of the Midwest
- Manhattan—Junction of Land and Sea

UMI

their gates. All drive home the lesson that the location of towns depends on two things—the geography of the land and the occupation of its people.

Ten of Africa's inland crossroad towns appear on the outline map, right. The lines connecting them signify routes of travel—roads, trails, railroads, and rivers. Two such routes cut across the Sahara, winding from one water hole to the next. One east-west route, from Bamako through Kano to Khartoum, threads the Sudan, a dry but not desert belt south of the Sahara. It was no accident that caravaneers chose this favored region. Travel was easier than on the desert, and the lush tropics—with unlimited water and jungle trade—were a step to the south. Farther along lie central Africa's lakes, mountains, and plains and South Africa's veldt.



Africa's inland junction points described in story

HAROLD C. WEAVER

KANO'S GATES look down on cattle and kings. Here livestock share the road with the local Emir's guardsmen.

FEW African towns display their crossroad origin more clearly than Kano, trading center of Nigeria's Northern Region. An early British explorer dubbed it "the great emporium of the Kingdom of Hausa."

The tall Hausa people, cool and secure behind their intricately sculptured mud walls, still prosper from commerce. Planes, trains, and trucks serve the town, picking up cargoes of tin, cocoa, fezzes, and the cured goatskin that is sold in the north as "morocco" leathers. Camels clomp through the gates as they have for centuries, exchanging peanuts for the blue-dyed cloth that Tuaregs wear.

(Send for list of National Geographic Magazine issues with articles on Africa.)

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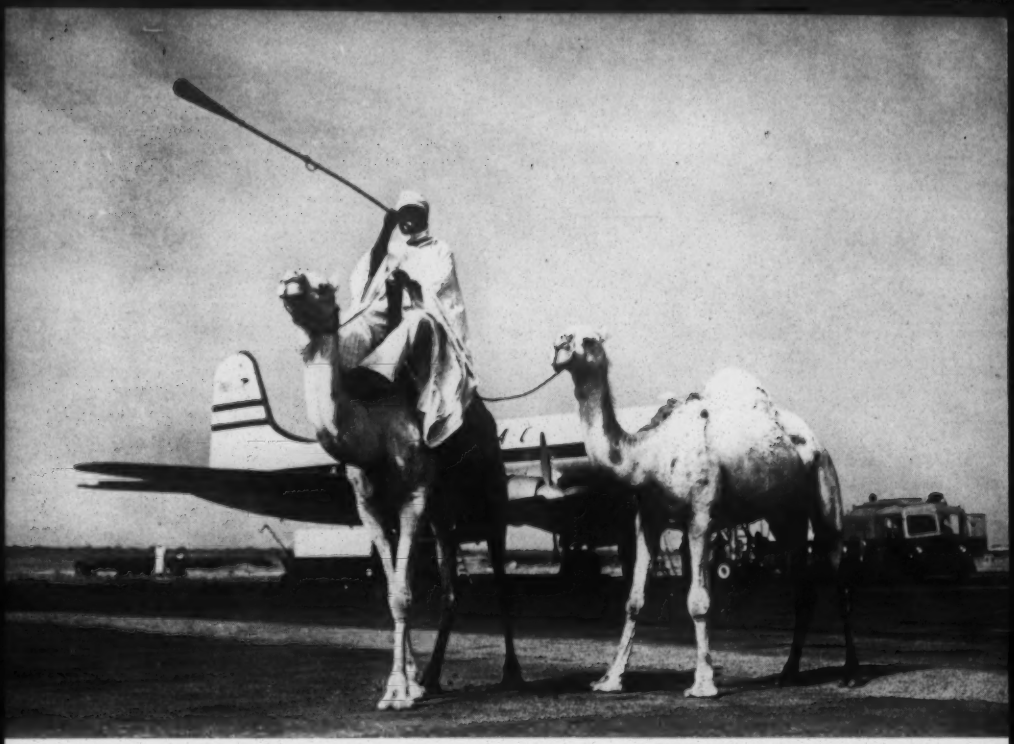

W. ROBERT MOORE, NATIONAL GEOGRAPHIC STAFF

Focus on Africa's Interior

A Continent's Crossroads

THE camel driver at Kano has become an institution. Visitors enjoy watching him toot his warning when he hears the mutter of an approaching airliner. But more than providing a picturesque by-play for air passengers, this custom points up a lesson in human geography. It underscores the fact that this Nigerian city, Kano, is an African crossroad where travelers meet—by plane, train, car, and camel.

Towns have been born at crossroads since primitive man first started to travel to forage for his necessities of life. He followed natural routes—animal trails, valleys, watercourses. Sometimes he rafted down rivers.

It was only natural that where one trail crossed another, some men would "set up shop." It was often easier to barter with passers-by than to forage for oneself. So, at the junction of paths or streams, an infant city might be born.

Such vignettes have been enacted on every continent. In Africa, where the dim past spills into the present, caravans still plod across the Sahara. Cameleers like those on the cover still occasionally tote their bags of produce to the nearest market place—often a city like Kano that grew where caravan trails crossed.

The pages that follow illustrate some of Africa's crossroad towns. Some sprouted where paths met, some were deliberately built by white men to serve as rail or road junctions, some mushroomed above rich mineral deposits before traveled routes found the way to

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RICHARD HARRINGTON, THREE LIONS

TIMBUKTU gained its great reputation around the 15th century when its population reached 20,000. But in dry seasons the Niger River too often stays away from its door. Market places, left, are quiet today, filling only local demands. Population has ebbed to some 6,000.

AS BIGGER VESSELS began carrying Niger commerce, Timbuktu, six miles from the river at low water, demanded its own "port." Kabara, below, answers the need. Even so, trade seeks better located river towns.

Bamako (see map) lies farther upstream on the Niger River in French Sudan. The town booms with 10 times Timbuktu's population. Railroads and airlines feed it. Trucks pour into Bamako over hard roads. They can't negotiate the marshy ground around Timbuktu.

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Desert and Rivers Provide Routes

OASIS TOWNS of the Sahara grow as large as their water supply. This one is El Oued, eastern neighbor of Touggourt. About 10,000 dwell in dome-roofed homes and live off the trade that fills their market, outside the mosque. A railroad links them with Algiers and other Mediterranean ports.

KANO was once the southern base for one of the great trans-Sahara camel routes. As many as 20,000 camels would gather in the mud city, trading salt for corn and textiles. The caravans picked up their loads of salt at little oases deep in the Sahara. Every such watering place, then, invited a few hardy settlers and became a town.

One of these settlements is Touggourt, where some 12,500 Algerians live in a fertile island surrounded by desert sands. How long traders have touched at Touggourt no one knows. A Roman road stretched to it from the shore of the Mediterranean. Centuries later a railroad reached out to it from well-settled northern Algeria. Today, a highway accompanies the railroad. And with the Algerian oil discovery (see page 224) a new commercial "route" passes through the old oasis—an oil pipeline.

Touggourt typifies oasis towns in this region of Algeria. Their origin as settlements is clearly defined, for their water supplies lured every traveler who ventured into the desert. But on the edge of the Sahara the old city of Timbuktu (Tombouctou) rose to prominence for different, yet related, reasons.

Timbuktu sprouted on the bank of the Niger River where that stream makes its great northern bend. That curve, in what is now French Sudan, brushes the southern edge of the Sahara—and reaches closer to northern oasis towns and the Mediterranean Sea than any other stretch of the river. Naturally, trans-Sahara caravans made for that nearest loop of the Niger. So Timbuktu was born—the meeting place of camel and canoe, of desert and jungle cultures.

GEORGE RODGER, MAGNUM

SOME TOWNS burst into life above rich minerals, then lured routes of travel to them. Elizabethville (Elisabethville) was tailored to tap the Belgian Congo's Katanga mines. Stanleyville rose on the Congo's banks to ship copper downstream. South Africa's Johannesburg, below, was barren veldt in 1886, now booms with skyscrapers, half a million people.

At Mogren Point in Khartoum, Blue Nile and White Nile meet. The former winds down from Ethiopia's hills; the latter from Lake Victoria. Downstream lies Egypt. No wonder a city grew at this meeting of vital waters.

Khartoum, capital of the two-year-old republic, Sudan, serves as rail and highway junction. Its airport calls itself Africa's air crossroad.

Three cities, Khartoum, Khartoum North, and Omdurman, form a metropolis of some 200,000. Streetcars, above left, link the sections.—

BRITISH OVERSEAS AIRWAYS CORPORATION

Still Growing, Africa Struggles With Oxen, Builds Skyscrapers

When Masai tribesmen drove herds toward Kenya's mountains for upland grazing, they would pause at a stream where plains give way to foothills. British railroad builders, following an old slave caravan trail, paused at the same place and built a city—Nairobi. Its name means watering place.

W. ROBERT MOORE, NATIONAL GEOGRAPHIC STAFF

IN KENYA (above) all roads lead to Nairobi. Built where two types of terrain meet, at the spot where an ancient trail crossed a stream, the capital occupies a natural crossroads location. Through Africa's centuries people passed it by—apparently until 59 years ago. Now Nairobi throbs with 100,000 citizens.

W. ROBERT MOORE, NGS STAFF

Nandi housewife heads for her Kenya market place

Bulawayo, right, in Southern Rhodesia, compares with a Midwestern American town (see picture, page 225). But these trim shops mark British settlement on a crossroad town that had thrived for 2,000 years in unknown Africa.

Bulawayo, straddling a ridge of high veldt, lies near ancient ruins thought to be dwellings of people who worked in gold mines —possibly for King Solomon.

EWING GALLOWAY

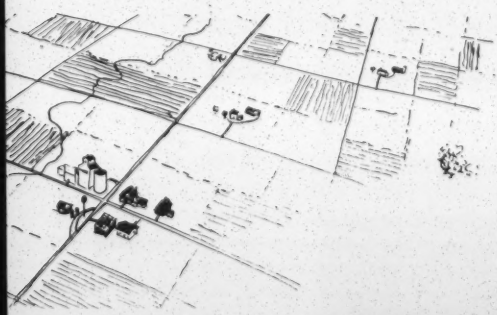
Geography Takes a Back Seat in the Midwest

Crossroads by Blueprint

IN Africa and elsewhere crossroads usually occur where geography and the natural pursuits of man combine to place them. But geometry, not geography, often determined the issue in America's Midwest. Before the vast area west of the Alleghenies was settled, Congress decided to survey the land in rigid checkerboard style rather than letting property lines develop helter skelter. Each square of the checkerboard was to be a square mile, or "section," and roads were to run straight as arrows along the section boundary lines. Thus, when a block of four sections was surveyed, a ready-made crossroad existed for the settlers who took up the lands.

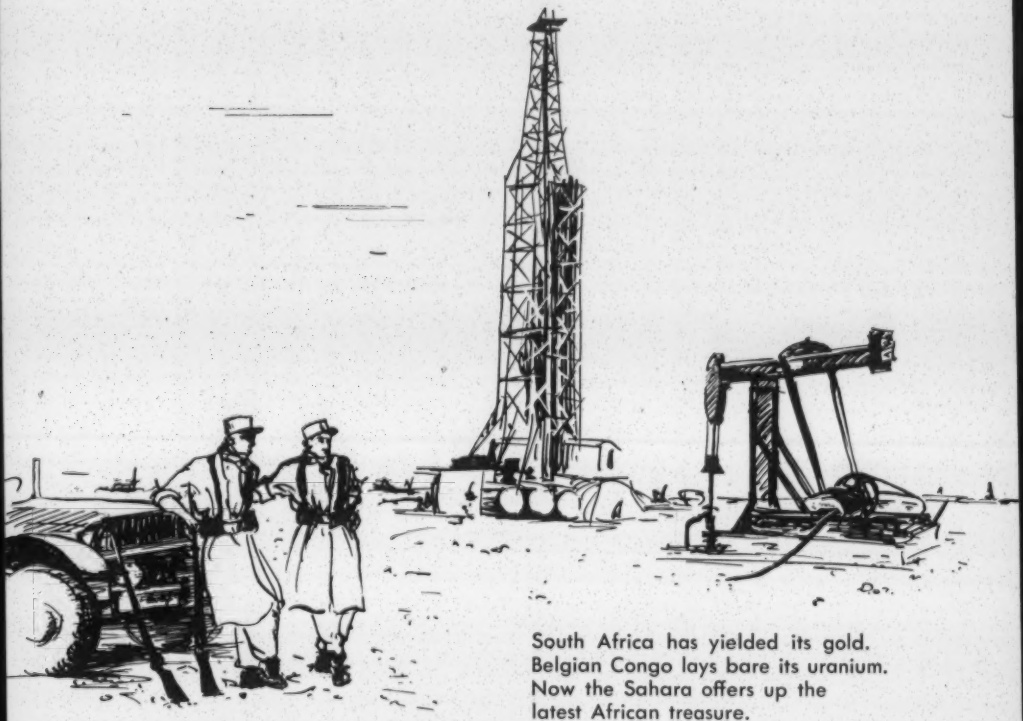
Today, from Ohio to the Rockies and beyond, many a hamlet, county-seat town, and even small city still stand where they rose at intersections of these drawing-board roads. Nowhere in the world is man's stamp of orderliness so evident over such a large area. Fly over it; the mile sections reduce to city-lot size and an entire State looks like a subdivision—which it is. Drive into it from the mountains; your highway straightens and follows a precise east-west course, rarely varying. Precisely every mile you come to a crossroad going precisely north and south. Here comes a hill; you go over it, not around it. Now a small river looms ahead; your beeline boulevard does not bother with finding the best spot for a bridge. It crosses the stream according to blueprint—where the arbitrary rectangles say it shall cross.

And, accommodating the plan, crossroad towns spring up before you every few miles. Usually you can see the next one as you leave the last. There's nothing like it in the world. Yet, for those born and raised within the gigantic grid of the Midwest, nothing could seem more natural. Wherever he goes, the plainsman's image of a crossroads will always be a cluster of buildings at the intersection of four razor-straight highways coming from the cardinal points of the compass. For him, the crooked lanes and topsy-turvy villages of the rest of the world are mere accidents of nature.—R.G.



NATIONAL GEOGRAPHIC PHOTOGRAPHER J. BAYLOR ROBERTS

Artificial Crossroad resulting from rectangular survey law of 1785 ordained the location of this town, founded a century later on North Dakota's plains.



South Africa has yielded its gold. Belgian Congo lays bare its uranium. Now the Sahara offers up the latest African treasure.

Oil Creates a Crossroad

DESERT crossroads like Touggourt used to see little traffic but camel caravans, or more recently an occasional vehicle. Now natives look upon a buzz of activity. Trucks rumble through town pulling collapsed steel towers. Railroad tank cars clack northward 300 miles to the Mediterranean. Last January a six-inch pipeline snaked its way out of the desert into town. The reason for all this activity lies at the far end of this pipeline—oil.

Prospectors struck oil last year beneath the Sahara's rocky, wind-swept surface, in eastern Algeria. Geologists guess there will be enough to satisfy the industrial thirst of the parent country, France, now an oil importer. By 1960, France's Minister of the Sahara estimates, Algerian wells will flow with 14,000,000 of the 18,000,000 tons France needs each year.

A half-dozen oil companies, including some United States firms, sink their rotary drills in the area's sand and rock.

But the oil discovery comes at a time when France is attempting to quell rebellion in Algeria. Observers predict the oil will fuel not only French automobiles but Arab nationalism as well. Since 1954, much of the French Army has been pinned down in Algeria, protecting life and property from hit-and-run raids. Now Legionnaires must guard oil rigs also. Rebels specialize in quick, murderous thrusts —a train derailed, a bus machine-gunned, a convoy ambushed. Rebellion feeds on an Algerian economy that leaves many families undernourished, unemployed, and ill-housed. Arab extremists and communist troublemakers fan the flames.

France combats the revolt in two ways: by military force against the rebels; by social and political reform and economic progress for peaceful Algerians. Oil will undoubtedly alter the equation—in whose favor it is too early to tell—A.P.M.

world were finding anchorage, New York City profited enormously.

Soon commerce boomed too rapidly for the population. To fill the gap, immigrants and back country people began to swarm into the city. Buildings marched up Manhattan from The Battery, inexorably filling the entire island. Residences once pleasantly separated drew closer together. Structures soon began the trend toward height—an architectural solution to overcrowding.

Millions today are familiar with the result of Manhattan's evolution. Its sky-high towers catch sunlight that never penetrates some corners of canyonlike streets. Founded on the island's rock frame, skyscrapers can fly as high as structural materials allow with no danger of settling. The rock also allows a network of tunnels to honeycomb the island—that city beneath a city, the subway system.

Manhattan's geographical shape has encouraged rapid transit. Howling from one end to the other, fast trains tie the harbor area to the business district and the uptown bridges. The island's slender east-west breadth means quick contact between East River and Hudson docks.

So the island of Manhattan sits at its crossroad. Like a living thing, it breathes smoke. Its docks bristle like tentacles, waiting to be fed. Its streets and tunnels pulse with commerce.—S.H.

HERBERT LANKS. PIX

LITTLE HARLEM RIVER makes Manhattan an island. But seemingly countless bridges tie it firmly to its sister borough on the mainland. This southern view above the Harlem shows the narrow northern tip of Manhattan, right, facing the Bronx, left. Giant Triborough Bridge describes a "Z" in the background, winding down from distant Queens to leap the East River, skim across Wards Island and Randalls Island, then jump the Harlem and enter Manhattan.

So dependent is this island city on the life line of food and products pouring across its bridges and chugging up its rivers and harbor that a major strike among truckers or tugboat operators can virtually paralyze the throbbing metropolis.

ROBERT F. SISSON, NATIONAL GEOGRAPHIC STAFF

Manhattan—Land, Sea Hub

TAKE any two lanes of travel, cross them, and you have the ingredients for a village. Now, suppose one of those lanes is a 300-mile river flowing through rich and pleasant farmland. At its mouth it widens into a well-protected harbor. There it meets a second river, or a strait, linking the harbor with a long, salt water sound that washes fertile shores.

Place an island right at that junction—a long finger of solid rock, an "island" only because of a narrow stream cutting it from the mainland. With such a geographic recipe, mankind has cooked up its most fabulous dish—the Borough of Manhattan, above, nucleus of New York City.

The Hudson River, rising in the Adirondacks, forms a central artery for the rich, varied produce of New York State. Commerce flows down the Hudson Valley by barge, rail, and truck, to the long row of wharves that jut into the river from Manhattan's West Side. Docks also line the East River, the link between Upper New York Bay and Long Island Sound. Originally, the junction of these waterways ensured importance for Manhattan. But as its history progressed, highways and railroads funneled into it, jumping the Harlem River. Its location has made Manhattan the most valuable island of its size (12 and a half miles long by two and a half wide) in the world.

Trade-minded Dutch settlers in 1626 paid the Indians $24 in trinkets for Manhattan. Later, as towns thickened along the east coast, trading ships filled New York Bay and the rivers framing Manhattan.

Gradually dusty streets poked northward on the island, through forest, gully, and brambles. Now a thoroughfare belonging to the world, Broadway was fashioned by the 17th-century Dutch. Tradition says the street followed an Indian trail along a chain of hills from Manhattan's tip to a forested fringe of the Hudson where warriors crossed toward the Delaware. Firearms roared during bear hunts at Broadway's upper end.

Despite scars from the Revolutionary War, New York City had 80,000 people by 1800. Twenty-five years later came the city's greatest boon. The Erie Canal was opened from Buffalo to Troy and Albany, connecting the Great Lakes with the Hudson River. Along its original 363 miles traveled people and manufactured goods for the West. Barge loads of raw materials moved to eastern plants and foreign ports. Sitting at its river-harbor crossroad, where already ships of the

Crossroads of the World: Manhattan's West Side Watches SS America Depart, SS United States Arrive at Hudson Piers
UNITED STATES LINES